

What is claims is:

1. A method for manufacturing a throwaway tip, comprising:  
press-forming raw material powder to obtain a green compact  
for the throwaway tip;

placing the green compact on a sintering plate; and  
sintering the green compact isotropically and uniformly,  
wherein the green compact is sintered so that a volume of  
deformation in a shrinking direction for a shape and dimension  
to be given to the throwaway tip after sintering is gradually  
increased in a predetermined direction, and

wherein the green compact is placed on the sintering plate  
so that the predetermined direction is oriented substantially  
toward the outer circumference of the sintering plate in plan  
view.

2. The method for manufacturing a throwaway tip according  
to Claim 1,

wherein the green compact is formed into a shape and  
dimension that dimension difference between the green compact  
and the throwaway tip after sintering is gradually decreased in  
the predetermined direction, so that a volume of deformation in  
a shrinking direction for the shape and dimension to be given  
to the throwaway tip after sintering is gradually increased in

the predetermined direction.

3. The method for manufacturing a throwaway tip according to Claim 1,

wherein the green compact is press-formed so that the density of the raw material powder is gradually decreased in a predetermined direction, so that a volume of deformation in a shrinking direction for the shape and dimension to be given to the throwaway tip after sintering is gradually increased in the predetermined direction.

4. The method for manufacturing a throwaway tip according to Claim 3,

wherein, when the green compact is press-formed by filling the raw material powder into a cavity formed in a die, the quantity of the raw material powder filled into the cavity is controlled in the predetermined direction of the green compact after the press forming.

5. The method for manufacturing a throwaway tip according to Claim 4, further comprising:

providing a lower punch in the cavity having an opening in the top face of the die to move vertically relative to the die; and

providing a raw material powder feed box above the top face

of the die to move across the top face, whereby, when the raw material powder feed box is moving on the opening of the cavity, the raw material powder is supplied from the raw material powder feed box and filled into the cavity while the lower punch is vertically moved so that the filling quantity of the raw material powder is controlled in the predetermined direction.

6. The method for manufacturing a throwaway tip according to Claim 3, further comprising:

filling the raw material powder into the cavity formed in the die; and

scraping an upper portion of the filled raw material powder, wherein the green compact is press-formed by selecting a direction opposite to the scraping direction as the predetermined direction.

7. The method for manufacturing a throwaway tip according to Claim 3,

wherein the green compact is formed with a shape and dimension so that dimension difference between the green compact and the throwaway tip after sintering is gradually decreased in the predetermined direction.

8. The method for manufacturing a throwaway tip according to Claim 1,

wherein a plurality of the green compacts are radially or concentrically placed on the sintering plate in plan view.

9. The method for manufacturing a throwaway tip according to Claim 1,

wherein a plurality of the green compacts are placed on the sintering plate in a lattice or zigzag shape in plan view, wherein the plurality of green compacts placed on the sintering plate are divided into a plurality of green compact groups respectively extending from an inner circumferential center of the sintering plate toward the outer circumference thereof in plan view, and

wherein the orientations of the green compacts in the same green compact group are made parallel to each other.

10. An apparatus for aligning a green compact, comprising:  
a sintering plate on which a green compact is placed and aligned, the green compact being formed by press-forming raw material powder,

wherein the green compact is placed on the sintering plate so that a predetermined direction of the press-formed green compact is oriented substantially toward the outer circumference of the sintering plate in plan view.

11. The apparatus for aligning a green compact according to Claim 10,

wherein a plurality of the green compacts are radially or concentrically placed on the sintering plate in plan view.

12. The apparatus for aligning a green compact according to Claim 10,

wherein a plurality of the green compacts are placed on the sintering plate in a lattice or zigzag shape in plan view, wherein the plurality of green compacts placed on the sintering plate are divided into a plurality of green compact groups respectively extending from an inner circumferential center of the sintering plate to the outer circumference thereof in plan view, and

wherein the orientations of the green compacts in the same green compact group are made parallel.

13. The apparatus for aligning a green compact according to Claim 10, further comprising:

a sintering plate holder for horizontally holding the sintering plate; and

a conveyance mechanism for holding and conveying the green compact to be placed on the sintering plate,

wherein the sintering plate holder has a rotation mechanism for positioning and rotating the sintering plate at each predetermined angle of rotation around its vertical axis.